

CLAIMS

What is claimed is:

1. A method for manufacturing a blended wing aircraft, the blended wing aircraft including a centerbody cabin and being a member of a family of blended wing aircraft wherein each other member of the family has an associated centerbody cabin with a different capacity, the method comprising:

segregating the centerbody cabin into a plurality of body modules, the body modules being arranged about a centerline of the center body cabin such that a configuration on a first lateral side of the centerbody cabin is a mirror image of a configuration of the body modules on a second lateral side opposite the first lateral side of the centerbody cabin; and

coupling a plurality of the body modules to one another to form the centerbody cabin;

wherein each of the body modules wholly disposed on the first lateral side of the centerbody cabin is uniquely configured in at least one of its length, width and capacity; and

wherein each of the body modules wholly disposed on the first lateral side of the centerbody cabin is also employed in a first lateral side of another member of the family of blended wing aircraft having a larger capacity centerbody cabin.

2. The method of Claim 1, further comprising:
forming a pair of wings; and
joining a first one of the wings to the first lateral side of the centerbody cabin
and a second one of the wings to the second lateral side of the centerbody cabin.
3. The method of Claim 2, wherein the pair of wings are common to the
family of blended wing aircraft.
4. The method of Claim 2, wherein each of the body modules
terminates rearwardly of a leading edge of the blended wing aircraft and the
blended wing aircraft cabin further includes a pair of leading edge panels, each of
the leading edge panels being coupled to the centerbody cabin and one of the
aircraft wings.
5. The method of Claim 2, wherein the aircraft wings and the
centerbody cabin have positive sweep angles.
6. The method of Claim 1, further comprising:
forming an aft centerbody cabin; and
coupling the aft centerbody cabin to an aft end of the centerbody cabin.

7. The method of Claim 6, further comprising coupling a propulsion source to the aft centerbody cabin.

8. The method of Claim 1, wherein each of the body modules has a body structure centerline, and wherein each of the body modules that is positioned such that its body structure centerline is not coincident with a centerline of the centerbody cabin includes a tip portion that forms a portion of the leading edge of the blended wing body aircraft, the tip portion including an inner edge that is configured to mate with a forwardly positioned portion of the aircraft body.

9. The method of Claim 8, wherein an outer edge of an end body module includes a first portion that is generally parallel to the centerline of the centerbody cabin and a second portion that is angled outwardly toward a wing of the blended wing aircraft and forwardly toward the leading edge of the blended wing aircraft.

10. The method of Claim 9, wherein the second portion of the outer edge of the end body module is substantially perpendicular to the leading edge.

11. The method of Claim 1, further comprising coupling an upper skin assembly and a lower skin assembly to the body modules, each of the upper and lower skin assemblies defining at least a portion of an upper outer surface and a lower outer surface, respectively, of the blended wing aircraft.

12. A method for providing a family of blended wing body aircraft, the family including a plurality of aircraft members, each aircraft member having a centerbody cabin with a different capacity, the method comprising:

forming a pair of wings that are common to each of the aircraft members;

segregating the centerbody cabins into a plurality of body modules, the body modules being arranged about a centerline of each center body cabin such that a configuration on a first lateral side of the centerbody cabin is a mirror image of a configuration of the body modules on a second lateral side opposite the first lateral side of the centerbody cabin;

wherein each of the body modules wholly disposed on the first lateral side of a given one of the centerbody cabins is uniquely configured in at least one of its length, width and capacity; and

wherein each of the body modules wholly disposed on the first lateral side of the given one of the centerbody cabins is also employed in a first lateral side of another aircraft member of the family of blended wing body aircraft whose centerbody cabin capacity is larger than the capacity of the given one of the centerbody cabins.

13. The method of Claim 12, wherein each of the body modules terminates rearwardly of a leading edge of the blended wing aircraft and the blended wing aircraft cabin further includes a pair of leading edge panels, each of the leading edge panels being coupled to the centerbody cabin and one of the aircraft wings.

14. The method of Claim 12, wherein the aircraft wings and the centerbody cabin have positive sweep angles.

15. The method of Claim 12, further comprising:
forming an aft centerbody cabin; and
coupling the aft centerbody cabin to an aft end of the centerbody cabin.

16. The method of Claim 15, further comprising coupling a propulsion source to the aft centerbody cabin.

17. The method of Claim 12, wherein each of the body modules has a body structure centerline, and wherein each of the body modules that is positioned such that its body structure centerline is not coincident with a centerline of the centerbody cabin includes a tip portion that forms a portion of the leading edge of the blended wing body aircraft, the tip portion including an inner edge that is configured to mate with a forwardly positioned portion of the aircraft body.

18. The method of Claim 17, wherein an outer edge of an end body module includes a first portion that is generally parallel to the centerline of the centerbody cabin and a second portion that is angled outwardly toward a wing of the blended wing aircraft and forwardly toward the leading edge of the blended wing aircraft.

19. The method of Claim 18, wherein the second portion of the outer edge of the end body module is substantially perpendicular to the leading edge.

20. The method of Claim 12, further comprising coupling an upper skin assembly and a lower skin assembly to the body modules, each of the upper and lower skin assemblies defining at least a portion of an upper outer surface and a lower outer surface, respectively, of the blended wing aircraft.